

WHAT IS CLAIMED IS:

1. A drug delivery apparatus comprising:
 - a housing having an inlet port and an outlet port;
 - a drug reagent bed within the housing, the drug reagent bed in communication with a fluid flow path between the inlet port and the outlet, wherein the drug reagent bed comprises reagents for the preparation of a solution suitable for intravenous administration;
 - a bypass within the housing between the inlet port and the outlet port, wherein the bypass bypasses the drug reagent bed; and
 - a collection chamber in fluid communication with the fluid flow path and the bypass.
2. The apparatus of Claim 1, further comprising at least one compression component positioned to exert pressure on the drug reagent bed.
3. The apparatus of Claim 1, further comprising a reagent restraint positioned upstream from the reagent bed.
4. The apparatus of Claim 3, wherein the reagent restraint is hydrophilic.
5. The apparatus of Claim 1, further comprising at least one terminal frit, wherein the at least one terminal frit is hydrophobic.
6. The apparatus of Claim 1, wherein the at least one terminal frit has a porosity from about 5 to 100 microns.
7. The apparatus of Claim 1, wherein the at least one terminal frit has a porosity from about 10 to 20 microns.
8. The apparatus of Claim 1, wherein the bypass is in the middle of the housing.
9. The apparatus of Claim 8, wherein the bypass is surrounded by the fluid flow path.
10. The apparatus of Claim 1, wherein the bypass is porous.
11. The apparatus of Claim 1, wherein the bypass has a porosity greater than a porosity of the compression component.

12. The apparatus of Claim 1, further comprising a plurality of elements housed within the housing selected to vary relative flow rates along the fluid flow path and the bypass to regulate a concentration of solution formed from diluent and the drug reagent bed.

13. An intravenous drug delivery apparatus comprising:

a housing having an inlet port and an outlet port;

a drug reagent bed within the housing, the drug reagent bed in communication with a first fluid flow path between the inlet port and the outlet port;

a second fluid flow path within the housing between the inlet port and the outlet port, the second fluid flow path bypassing the drug reagent bed, wherein the drug reagent bed comprises reagents for the preparation of a solution suitable for intravenous administration;

a flow resistance element of the second fluid flow path selected relative to the first fluid flow path to control a concentration of solution formed from diluent and the drug reagent bed; and

a collection chamber downstream of the reagent bed, the collection chamber in fluid communication with the first fluid flow path and the second fluid flow path.

14. The apparatus of Claim 13, further comprising at least one compression component positioned within the housing to exert pressure on the drug reagent bed.

15. The apparatus of Claim 13, further comprising at least one hydrophobic terminal frit.

16. The apparatus of Claim 13, wherein the second fluid flow path is in the middle of the housing.

17. The apparatus of Claim 13, wherein the second fluid flow path is at the periphery of the housing.

18. The apparatus of Claim 14, wherein the at least one compression component is porous.

19. A drug delivery apparatus comprising:

a housing having an inlet port, an outlet port, and at least one compression component;

a drug reagent bed within the housing, the drug reagent bed in communication with a first fluid flow path between the inlet port and the outlet port, wherein the drug reagent bed comprises reagents for the preparation of a solution suitable for intravenous administration, and the at least one compression component is positioned within the housing to exert pressure on the reagent bed;

a second fluid flow path at the periphery of the housing between the inlet port and the outlet port, wherein the second fluid flow path bypasses the drug reagent bed; and

a chamber within the housing in fluid communication with the first fluid flow path and the second fluid flow path.

20. The apparatus of Claim 19, wherein the at least one compression component is positioned upstream of the reagent bed.

21. The apparatus of Claim 20, wherein the compression component comprises a celled polymeric material.

22. The apparatus of Claim 19, wherein a size of the second fluid flow path is selected to vary relative flow rates along the first and second paths to control a concentration of solution formed from diluent and the drug reagent bed.